

Appendix B

Work Plan Development Documentation

MEETING MINUTES
INSTALLATION ACTION PLAN, FY 2007
RCFA Facility Investigation (RFI) Meeting, 13-14 February 2007

Place: Sheraton Hotel, Old San Juan, PR

Date, Time: 13 February 2007, 830 AM – 16:30 PM
14 February 2007, 9:00 AM – 16:00 PM

Attendees: US Army Environmental Command (AEC) - *Richard Isaac, Ira May*
Puerto Rico Environmental Quality Board - *Manuel Vargas*
Fort Buchanan Environmental Division - *Anibal Negron, Felix Mariani, Amaly Diaz*
USACE-Waterways Experiment Station (WES) - *Stanley Swartzel*
Installation Management Command Southeast (IMCOMSE) - *Michael Riegert*
EA Engineering, Science, and Technology (EA) - *Scott Dobson, Bill Harvey*
EPA Region II - *Sam Ezekwo*
TechLaw - *Carole Harris, Laura Pugh*
US Army Reserve Operations Headquarters (ARO-HQ) - *Soe Aung*

This meeting was held to discuss details of the RCRA Facility Investigation (RFI) to be performed at Fort Buchanan, Puerto Rico. A site visit of all of the RFI sites was conducted at Fort Buchanan on the morning of 13 February 2007. Following the site visit, a meeting was conducted at the Sheraton, Old San Juan to discuss the Northwest Boundary Investigation.

Introduction

Following the site visit on 13 February 2007 the Army and EA presented the findings of the TCE investigation of the northwestern boundary. The investigation included the installation of six monitoring well clusters (two wells each) and two single wells. The initial groundwater sampling event was conducted in January 2007. The conclusions of the initial investigation include:

- SWMU-3 Pesticide and Chemicals Burial Trench is not the source of TCE contamination in groundwater.
- Groundwater elevations are steepest to the south and relatively flat to the north of the study area.
- Pesticides and herbicides were not detected in groundwater.
- TCE is the main chemical of potential concern at the site.
- The source of TCE contamination remains undefined.

Based on the conclusions of the initial investigation, the Army presented proposed locations for an additional 5 monitoring well clusters to further assess the extent of onsite TCE contamination in groundwater and groundwater elevations throughout the site.

The meeting was adjourned with the purpose that site data had been presented and further discussion and concurrence on a future path of investigation will occur on 14 February 2007.

General Comments

Richard Isaac (AEC) opened the 14 February 2007 meeting by stating that the Army was seeking concurrence to the northwest boundary trichloroethylene (TCE) investigation. Once this was accomplished, the meeting would move into discussions on the other RFI sites.

Northwestern Boundary TCE Investigation

The meeting began with Richard (AEC) reviewing the discussion from the previous day's meeting (13 February 2007) and site visit concerning the continuing TCE investigation. Each well cluster location was discussed, with Carole and Laura from TechLaw expressing the general opinion that our goal with the new configuration was to bound the contamination plume. Felix (Ft Buchanan) expressed concern over the well cluster proposed within the forested area immediately north of the DPW complex; this location was then moved to the perimeter road between the current MW-6 and MW-7 clusters. Ira (AEC) stated that the well numbering would go 9-13, south to north. Additionally, Rich proposed the physical inspection of the wooded area north of the DPW complex and a possible magnetic survey for any source material.

The groundwater samples (two rounds) will be analyzed for VOCs, SVOCs, and PCBs at the cluster immediately north of the DPW complex. The remaining wells will be sampled for VOC only.

Scott (EA) stated that each deep well will be continuously sampled and the screened interval only of each shallow well will be sampled. Soil samples will be sent for laboratory analysis if headspace readings are detected or staining is observed during the drilling operation.

Following a break, the meeting led to a discussion of the RFI sites.

RFI Sites

Richard (AEC) began the RFI portion of the meeting with a review of the historical basis for the additional investigation of the 15 sites identified in the RFA and EBS studies. He stated that the goal of this meeting was to agree upon sampling protocol for each site in order to complete an RFI workplan. EA is contracted to prepare the RFI Work Plan.

The meeting moved to a general discussion of what the sites should be called. Felix stated that for their purposes, he'd like to keep the site names and numbering system as separate from the SWMU distinctions. It was decided that SWMU designations will be kept with the site names.

Site 1, SWMU 1: Old Hazardous Waste Containers

Rich (AEC) stated that it was known that acids, bases, solvents, and pesticides were stored in an area on the northwest side of the facility. EBS reported concentrations of 42.5 ug/kg of pesticides in the soil near the building.

Soe (ARO-HQ) asked whether sediment sampling was necessary.

Carole (Techlaw) then suggested that soil sampling be conducted first. This was followed by an overall discussion of the previous RFI workplan submitted by HGS and proposed sampling included in the work plan.

Rich (AEC) then suggested focusing on the four soil borings around the building to begin the investigation. The EPA was concerned with the reported drain locations from inside the building onto the ground surface. Felix (Ft Buchanan) stated that he knew of one drain location and that the building is currently was used as an armory. Laura (Techlaw) requested that drain locations be investigated and researched prior to any sampling event and soil samples should be collected adjacent to any observed drain outlets first, and groundwater would then be sampled if hits were detected in the soil.

Rich (AEC) concurred with this approach, and summed up the investigation of this area as including a visual site inspection for drainage. Scott (EA) stated that the soil would be sampled for VOCs, SVOCs, PCBs, and pesticides. Rich (AEC) concluded by suggesting four soil borings, two samples per boring (0-2', 2-4').

The EPA stated that a discussion of the new well sampling downgradient from the site should be included in the discussion of SWMU 1.

Site 2, SWMU 3: Pesticide and Chemicals Burial Trench

Rich (AEC) stated that after the installation of monitoring wells and subsequent soil and groundwater sampling in the area (MW-1 through MW-3), he was recommending no further action (NFA) at the site. Based on the groundwater sampling and soil sampling, the suspected trenches could not be located (in addition to the test-pitting conducted previously by CHPPM). A mutual discussion concluded that the SWMU 3 site exclude the TCE Investigation, and the TCE Investigation would become a separate site.

Site 3, SWMU 4: Spent Solvents Storage Area

Rich (AEC) described the samples proposed in the area, and how the sampling was reduced from nine borings to four. Scott (EA) summarized the sampling proposed as four borings with two samples from each location (1-2'; 2-4') and collected well beneath the asphalt. Laura (Techlaw) questioned what analysis would be performed on the samples, and all agreed on VOCs, SVOCs, Pesticides, and Metals, and TPH. There was some discussion on a water table sample, but the well in the vicinity (MW-5) would provide this

data. Rich (AEC) concluded with the statement that hand auguring would achieve samples from 1-2' and 2-4' (eight total samples).

Site 4, SWMU 5: PCB Transformer storage area

Rich (AEC) stated that six borings adjacent to the asphalt on the northern side of the DPW complex were proposed. Soe (ARO-HQ) questioned why six borings were proposed and not four. It was stated that the area covered approximately 100 to 150 feet, and that six borings spaced approximately 20' apart would suffice. The conclusion was six surface soil borings (0-2') for PCBs analysis.

Site 5, SWMU 6: PCB Storage Area #2

Rich (AEC) gave a historical account of the PCB storage area. Laura (Techlaw) stated that two shallow borings should suffice. Rich (AEC) concluded that two shallow borings would be taken, but well beneath the asphalt (1-2', 2-4') and analyzed for PCBs.

Site 6: Pesticide storage (near golf course)

Rich (AEC) summarize the pad location, discussed the water flow direction in the area, and the sampling protocol proposed, and then asked for comments. Laura (Techlaw) stated that she believed the three borings to be appropriate. Scott (EA) asked if we should sample the borings from 0-2' and 2-4', and this was then agreed upon by the EPA. In total, three soil borings with two samples each (six total) and three sediment samples will be collected in the adjacent drainage ditch to the north of the site. All samples will be analyzed for pesticides.

Site 7: Building 541

Rich (AEC) stated that one soil boring downgradient from the drum (overflow pipe) was proposed. Two samples would be taken (0-2', 2-4'). It was then decided that a groundwater sample should be taken from the boring, and samples would be analyzed for metals, PCBs, pesticides, TPH, VOCs, and SVOCs.

Site 8: Building S-563 (hobby shop)

Rich (AEC) stated the proposed sampling protocol of sediment samples from the base of each overflow basin, and soil borings adjacent to each. Laura (Techlaw) and Soe (ARO – HQ) stated that soil should be sampled beneath the level of each sump. Laura (Techlaw) was concerned about the discharge pipes within the building and where they went. Scott (EA) stated that the drainages will be investigated prior to sampling and included in the summary report. It was concluded that the sediment samples and soil samples were adequate (two locations, 2-4' and 4-6') and the analysis would be for metals, TPH, VOCs, and SVOCs. The rationale for the soil sampling depths was to sample beneath the depth of the storm drain. Assuming sediment is present in the storm drain, efforts will be made in the field to collect deeper, less disturbed, sediment from the storm drain.

Site 9: Used Oil Staging Area

Scott (EA) asked whether the sampling protocol would be the same as for Site 5 (two downgradient soil borings). Rich (AEC) concurred with this, and stated that they would be near the fire hydrant. Laura (Techlaw) asked whether the soil borings should be more spread out. Felix (Ft Buchanan) stated that he believed three borings to be appropriate with two samples from each. There was some discussion on sample locations. Amaly (Ft Buchanan) mentioned that the samples should not be taken adjacent to the conex containers. Laura (Techlaw) requested the borings to be moved west of the fire hydrant, in a triangular shape. All concurred with this. The analysis agreed upon was for all analytes to be tested for, however, excluding TPH in the shallow samples.

Site 10: 65th Army Reserve Command Refueling Area

Rich (AEC) stated that the sample locations were near a concrete pad where a spill historically occurred. Felix (Ft Buchanan) stated that the spill was in a confined area, and occurred from the refueling of a truck. Laura (Techlaw) stated that there was some disconnect over the sampling protocol and the spill size. Felix (Ft Buchanan) estimated the spill size to be one or two gallons, but could not confirm whether the previous sampling occurred before or after the surface soil was removed by the Army. Rich (AEC) summarized with the sampling protocol of three soil borings on the southeast corner of the concrete pad, two samples coming from each (0-2', 2-4') and analyzed for TPH and VOCs.

Site 11: Heavy Equipment Storage Area

Rich (AEC) stated that at one time, vehicles were parked in this area when the ground was dirt-covered, and asked if sampling was required (the area is now asphalt-covered). He stated that currently the sampling plan was for four evenly-spaced borings, one sample per (2-4'). Laura (Techlaw) stated that the sample locations may not have been in the correct area, and may need to shift to the east. It was concluded that all samples (one each; 2-4') from the borings will be analyzed for TPH, VOCs, and PCBs.

Site 12: Old Landfill

Rich (AEC) summarized the history of the site, and stated that the initial size and location of the landfill had changed with the review of historical aerial photographs. He continued that it was mostly an area where municipal waste was pushed down a steep ravine towards a creek bed. In reviewing the well locations, Scott (EA) mentioned that MW-3 would need to be replaced, as it looked to be hit by a lawnmower.

Rich (AEC) then stated that arsenic had previously been detected in all surface water samples. Carole (TechLaw) stated that the arsenic and lead levels over the entire site would need to be evaluated as a priority due to the close proximity of children playing nearby. Rich (AEC) stated that the arsenic levels were high downgradient from the landfill area, in the creek bed, and not the playground area. Carole (Techlaw) continued by stating that the arsenic contamination was presumed to come from the upgradient area. Felix (Ft

Buchanan) then recited hits from a previous report. Carole (Techlaw) stated that the concern was solely with the children and the surface soil, and we should confirm whether the landfill ever occupied the playground area, and that the way the figure was drawn, they appeared to overlap. Rich (AEC) stated that the landfill consisted of a push out of fill material from the bedrock. Felix (Ft Buchanan) added that the entrance to the dump site was well above the school, which was built around 1962. Soe (ARO-HQ) stated that the arsenic and lead may be attributed to the igneous rock. Rich (EAC) stated that if we wanted to examine the arsenic levels on the playground area, we would have to grid the playground vicinity and achieve a 95% confidence interval to validate the findings. Scott (EA) stated that there is concern with elevated background arsenic levels in soil if sampling for arsenic is going to be conducted. Felix (Ft Buchanan) suggested that there should be a background report on background levels. Rich (AEC) suggested four soil samples onsite, and four offsite to test background levels of arsenic. He also stated that the water sampling protocol remain the same, and surface soils run for metals only. Laura and Carole (Techlaw) stated that they would like to see them run for all analytes. It was finalized that surface water samples will be analyzed for metals, TPH, VOCs, SVOCs, and pesticides, while soil will be analyzed for metals, TPH, SVOCs, and pesticides.

Site 13: Potential Hazardous Material Burial Site

Rich (AEC) began by summarizing that an early investigation found a low-lying area with construction debris; however the problem was the location of the debris within a heavily-vegetated area comprised of heavy root systems. He proposed using a magnetometer to find piles of debris, and take soil samples beneath the piles, but move locations if refusal is encountered. Rich (AEC) then asked if we needed the monitoring well. Felix (Ft Buchanan) suggested not installing the monitoring well unless there was a soil hit. Rich (AEC) stated that if we found a debris site, we would take a soil sample; but if not, report that none were found. Rich (AEC) also said that the monitoring well location would become a definite soil sample location. Carole (Techlaw) summarized by saying that two samples will be taken out of the lowest-lying area from the same boring (0-2', 2-4') and up to six samples from the other locations where anomalies are discovered. A groundwater sample may be taken from the low-lying boring. Soil and possibly groundwater will be analyzed for metals, VOCS, SVOCs, TPH, pesticides, and PCBs.

Site 15: Building S-159 (near baseball field)

Rich (AEC) stated that a leaking used oil drum was spotted previously in the area, but the drainage swale was in a very eroded position (no surface water or sediment in the vicinity). Laura (Techlaw) asked what the proposed sampling locations were. Scott (EA) stated that there would be two soil sample locations. Rich (AEC) asked if we should only sample for TPH. Felix (Ft Buchanan) proposed the two samples to be taken near the bottom of the swale. Rich (AEC) proposed sampling for metals and TPH, and all agreed. There will be two samples per boring (0-1', 2-4').

The downgradient soil boring will be located immediately before entering the culvert.

Summary of Samples to be Collected as Part of the RFI Investigation, Fort Buchanan, Puerto Rico

Site	Number of Samples			Sediment	Groundwater	VOC	SVOC	Metals	PCBs	Pesticides	TPH
	# Samples	# Locations	Depth Interval (ft)								
1	8	4	0-2, 2-4	0	0	x	x		x	x	
3	8	4	1-2, 2-4	0	0	x	x	x		x	x
4	6	6	0-2	0	0				x		
5	4	2	1-2, 2-4	0	0				x		
6	6	3	0-2, 2-4	3	0					x	
7	2	1	0-2, 2-4	0	1	x	x	x	x	x	x
8	4	2	2-4, 4-6	2	0	x	x	x			x
9	6	3	2-4, 4-6	0	0	x	x	x	x	x	x
10	6	3	0-2, 2-4	0	0	x					x
11	4	4	4-Feb	0	0	x			x		x
12	8	8	0-6	6	4	x*	x	x		x	x
13	8	7	0-1, 2-4	0	1	x	x	x	x	x	x
15	4	2	0-1, 2-4	0	0			x			x
Total Samples:	74			11	6						

* VOC excluded from soil analysis

Ft Buchanan received notice from EPA region II in January 2005 that requires additional investigation of previous sites identified in RFA and EBS studies.

The following 15 sites were identified in the letter:

Site 1, Solid Waste Management Unit (SWMU) 1 Old Hazardous Waste Containers

Background: From 1968 to 1977 DDT, acids, bases, solvents and pesticides were stored in a 600 square feet area on the northwest side of the facility. The EBS reported concentrations of pesticide (1989) in the soil near the building of up to 42.5 ug/kg. A phase II investigation of the site reported up to 5 ug/kg of DDT in the soil.

Sampling Strategy: The Army and Regulatory Agencies have agreed to conduct additional soil sampling. Eight grab samples will be collected from four soil borings and analyzed for VOCs, SVOCs, PCBs, and pesticides.

Site 2, SWMU 3 Pesticides and Chemicals Burial Trench

Background: This disposal site was believed to be a trench 6 ft deep, 30 ft wide, and 100 ft long that was reported to be used to dispose of 1 ton of dry pesticides in 1977, along with construction debris and trees. The pesticides were suspected to be chlordane, p, p'- DDE, and heptachlor.

The trench was rumored to be along the perimeter road on the northwest corner of Fort Buchanan. In 1983 the Army sampled soil from 17 shallow and 1 deep boring. No firm evidence for the burial of pesticides was found. Subsequently, geophysical surveys using ground conductivity (quadrature, in-phase) and magnetic (total magnetic field, magnetic gradient) techniques were conducted. Survey results were then used to direct soil sampling in test pits spread across the SWMU 3 with various orientations. Fifty-two soil samples from 7 test pits showed no evidence of pesticide levels that would be indicative of amounts expected from routine pest control use. Only low concentrations of DDT of 3.28 ug/g were found in composite samples at a depth of 4 foot on the north end of test pit 3. In 2007 the Army installed 7 down gradient monitoring wells. Pesticides were not detected in any of the monitoring wells.

Sampling Strategy: Based on the results described above, the Army and the Regulatory Agencies agreed that no further action is required. The NFA for this site will be documented in the RFI Report.

Site 3, SWMU 4 Spent Solvents Storage Area

Background: Several 55-gallon drums containing spent solvents used as a coil cleaner were stored in the southwest portion of the Building 556 yard. These containers were stored on an asphalt pad without an enclosure or release control devices. The solvents stored at this location had a brand name "Vista" and contained hydrogen fluoride. Staining near the drums was observed during the 1990 survey period of operation at this storage site is from approximately 1980 to 1990. The RFA indicated that FTB generated about 80 gallons of spent solvent every three months.

Sampling Strategy: Four soil borings will be installed. Two grab samples will be collected from each of the four borings and sampled for oil, solvents, PCBs, and BTEX.

Site 4, SWMU 5 Polychlorinated Biphenyl (PCB) Transformers Storage Area #1

Background: Historical PCB Transformers were stored in a 21 ft by 8 ft wide area in the asphalt parking area northeast of DPW.

Sampling Strategy: Six surface soil samples adjacent to the asphalt pad where transformers were stored will be collected. Samples will be analyzed for PCBs.

Site 5, SWMU 6 PCB Transformers Storage Area #2

Background: In an 110 square feet wooden building south of DPW PCB Transformers were stored between 1980 and 1982. The building has a concrete floor and a high curb surround the storage area. A spill of 2 gallons of transformer fluid occurred at the site in June 1982. Hurricane Hugo destroyed the storage unit in 1989,

Sampling Strategy: Two soil borings will be installed on the down gradient side (Northeast); Samples will be collected from 0-2 ft bgs and 2-4 ft bgs. Soil samples will be analyzed for PCBs.

Site 6, Area of Concern 2 Pesticide Storage and Formulating Area #2

Background: A pesticide and herbicide mixing area, located on a 5-foot by 5-foot unbermed concrete slab, north of building 138. The mixing site was used from 1975 to approximately 1985. It was reported that as a result of pesticides being mixed at this location; spills have occurred. Runoff flows from the mixing area goes into an open-bank drainage ditch located 20 feet north of the building. No samples have been collected in this area.

Sampling Strategy: Three Soil Borings will be installed samples will be collected from 0-2 ft bgs and 2-4 ft bgs. Sediment samples will be collected at three locations along the adjacent drainage ditch northeast of the site. Samples will be analyzed for pesticides.

Site 7, Building 541

Background: The drainage system of the hazardous material waste storage area within Building 541 discharges directly to a 55-gallon drum containment system located north of the building. Approximately 75 percent of the 55-gallon drum is submerged within the ground. The secondary containment system consists of a concrete berm with an open PVC pipe at its base that discharges to the north. If there were ever a release within the hazardous material storage area effluent that exceeded the drum's capacity would be discharged directly to the soil through a overflow pipe. No spills have been reported from Building 541.

Sampling strategy: A soil boring will be installed down gradient on the effluent overflow pipe. Soil samples will be collected from 0-2 ft bgs and 2-4 ft bgs and just above groundwater. A groundwater sample will be collected from the boring. Samples will be analyzed for metals, PCBs, Pesticides, organics, VOCs, and SVOCs.

Site 8, Building S-563

Background: The building was used as an auto body shop from an undetermined date until the current hobby shop was constructed in 1988. In the EBS, visual inspection identified discarded auto parts within the storm water drains located west of the building. Any discharge from the building would occur in storm water drainage ditches on either side of the building. These drainages ditches empty into concrete storm water junction boxes located on the east side of building S-563.

Sampling Strategy: Conduct a site evaluation to ensure we understand the correct effluent discharge from the building. Obtain a sediment sample from the base of each drainage basin. Samples will be collected from Install a soil borings down gradient of each basin; samples will be taken will be taken. Two soil samples will be collected from 2-4 ft bgs and 4-6 ft bgs. Samples will be analyzed for Metals, TPH, VOCs, and SVOCs.

Site 9, Used Oil Staging Area

Background: The EBS notes that a used drum staging area was located south of building T-552. Eight 55-gallon drums of used oil were observed during a visual inspection of the DPW compound. Eventually, drums did have secondary containment; however stained soils were observed.

Sampling Strategy: Three Soil Borings will be installed. Samples will be collected from 2-4 ft bgs and 4-6 ft bgs. Samples will be analyzed for TPH, Metals, Pesticides, PCBs, VOCs, and SVOCs.

Site 10, 65th Army Reserve Command Refueling Area

Background: The EBS notes that a leak had occurred in this refueling area in May 1995. A one foot square area of stain soil was present in the southeast corner of the refueling area. Soil samples were analyzed for BTEX and TPH. BTEX concentrations were reported below proposed RCRA corrective action levels; however, TPH was reported at concentrations of up to 25,000 mg/kg, which exceeds EQB's criterion of 100 mg/kg. Within the last several years a two feet thick concrete pad was installed in this area. The stained area is located under the southeast corner of the concrete pad.

Sampling Strategy: Three Soil Borings will be installed on the southeast corner of the concrete pad. Samples will be collected from 0-2 ft bgs and 2-4 ft bgs. Samples will be analyzed for TPH, and VOCs.

Site 11, Heavy Equipment Storage Area

Background: A heavy equipment storage area is located south of building T-552. The EBS notes the release of various petroleum products has resulted from the equipment. The RFA makes no recommendations nor referenced any COC for this site (October, 1991). EPA states that a potential release has occurred at this location based on stained soil noted in the EBS. EPA recommends that additional investigation may be warranted to determine whether environmental media have been impacted by petroleum hydrocarbons. No additional soil assessment has been conducted, but an extensive investigative study is planned for the site, including assessment of the following COCs: PCBs, VOCs, TPH, metals, and BTEX

Sampling Strategy: Four soil borings will be installed. A sample will be collected from 2-4 ft bgs. Samples will be analyzed for TPH, PBC, and VOCs.

Site 12, Old Landfill

Background: The Old Landfill is located in the southern portion of the Fort Buchanan. A rumor of uncontrolled dumping of paint cans, oil drums, and other possibly hazardous materials had occurred at the site. In August 1979, sawdust was used to cleanup a diesel spill that was then containerized in plastic bags and placed in this landfill. The Army conducted an investigation that consisted of installing and sampling 4 monitoring and 4 surface water and sediment samples. The results of the investigation determined that:

- Groundwater flows northwestward in the water table aquifer at the old landfill site.
- Pentachlorophenol was detected at the down gradient MW-03 at concentrations of 0.71 to 59.2 ug/l.
- Arsenic was detected in all samples from all wells at levels higher than the MCL.
- Arsenic was detected in all surface water samples above the MCL. Arsenic levels in samples collected near the waste pile are more than eight times the MCL.
- Lead was detected in all ground-water samples. The concentrations of lead in monitoring wells MW-03 (waste pile) and MW-04 (down gradient) are above the MCL.
- Lead concentrations in 3 surface water samples were above the MCL. The highest level of lead was detected in surface water sample SW04, near the toe of the waste pile.
- TPH were detected in all sediment samples. The highest concentrations reported were in samples collected downstream and east of the Buchanan Heights housing area.
- In general, metal concentrations in soil samples were higher near the waste piles and decreased in a downstream direction.

Sampling strategy: Two groundwater monitoring wells will be installed in the surficial aquifer (approximately 25 feet bfs). 6 surface water, and sediment samples will be collected Northwest of the landfill along the headwater of the El Toro Tributary. 4 Surface soils samples will be taken in the area north of the fenced area (Elementary School Playground) and 4 soils soil samples will be taken offsite to be compare for background. All three monitoring wells located at the old landfill will be sampled twice. Groundwater and surface water samples will be analyzed for Metals, TPHs, VOCs SVOCs and Pesticides. Surface soil samples will be analyzed for metals, TPHs, SVOCs, and Pesticides. All three Monitoring well

Site 13, Potential Hazardous Material Burial Site

Background: This site represents a rumored hazardous material disposal site located south of Building S-18 in the Intermediate School Area. Unused chemicals from the high school were reportedly disposed at this location. Building S-18 is no longer in existence. An earlier investigation of the site found a low area near the S-18 filled with garbage, empty paint cans, fluorescent lamps, and construction debris. The Phase I investigation indicated there did not appear to be any significant prospect of contamination of the site under investigation from actual on-site or off-site operations.

Sampling strategy: A Site evaluation will be conducted to identify anomalies within the site.

Based on these anomalies the army will select six locations where soil borings will be collected using hand augers. One sample will be collected from each of the six boring between 0-2 ft bgs. One Boring will be installed on the East side of the site. This is the lowest point across the site and is where surface drainage consolidates. Soil samples will be collected from 0-2 ft bgs and 2-4 ft bgs. A groundwater samples will also be taken from this boring. Soil and Groundwater samples will be analyzed for Metals, SVOCs, TPH, PCBs, VOCs, and Pesticides.

Site 14, Building S-159

Background: The EBS identified two potential sources of contamination associated with Building S-159. An area north of S-159 contained seventeen 55-gallon drums of used oil and approximately five 55-gallon drums of parts washer. The drums appeared to be bulging and leaking. The used oil leakage flowed east to west across the pavement and into a grassy area and potentially down a hill into the storm water system. Stressed vegetation was observed. A second potential contamination area was noted on the west side of Building S-159. One 55-gallon drum of used oil and one 55-gallon drum of used coolant were being stored without containment. Staining beneath both drums was observed.

Sampling Strategy: Two soil borings will be installed. Samples will be collected from 0-2 ft bgs and 2-4 ft bgs. Samples will be analyzed for Metals and TPH.

The Northwest TCE Plume

Chlorinated solvents, primarily trichlorethene (TCE), have been detected at concentration up to 162 ug/L in groundwater monitoring wells samples collected along the Northwest boundary and within the adjacent Caribbean Refinery Company (CPR) property. The US Army Fort Buchanan was notified by USEPA Region II that while conducting the required RCRA Facility Investigation, CPR had identified the presence of a TCE Plume in the Lower and intermediate Aquifer. In accordance with EPA's letter dated February 11, 2005, the plume exceeds the MCL for TCE and is located beneath the eastern portion of CPR facility and extends beyond the CPR Facility boundary and extends onto the northwest portion of Fort Buchanan. The source of the TCE concentration has not been determined. The Army instituted a phase investigation where installation 14 monitoring wells along the northwest boundary of Fort Buchanan. Based on this data the source of the TCE could not be determined. Additional monitoring wells have been identified by the Army and EPA to fill data gaps.

Sampling Strategy: Physical inspection of possible source material in wooded area adjacent to the north of DPW. Magnetic survey of wooded area. 5 additional Monitoring well clusters will be installed. Addendum of the Work Plan Addendum
Two rounds of Groundwater sampling will be taken. Groundwater will be analyzed for VOCs, SVOCs, and one well for PCBs next to DPW.